

AN INSTITUTIONAL PROPOSAL FOR PROMOTION OF COMMUNITY PARTICIPATION IN SPACE REARRANGEMENT OF CITY BLOCKS IN KYOTO, JAPAN

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Abstract. This report emphasizes people of communities should play a principal part to conserve and inherit the historic heritages and have possibilities to do that. The authority of Kyoto City Government has enforced the new landscape conservation policies mainly to reduce the height level of buildings located in almost whole urban area of Kyoto since September in 2007. The background of the enforcement is the consensus for aiming the conservation and inheritance of the historic landscape that has been brought by the people of communities. The irreplaceable, historic and intangible consciousness of people has been cultivated by the huge tangible heritage. Now, on this occasion, this report suggests an institution for community participation to promote the space rearrangement of historic city blocks, which include a system for proposing the optional alternatives.

1. Backgrounds and Purposes of the Proposal

The random constructions of high-rise buildings such as condominiums have deformed the historic city blocks in the central area of Kyoto, where low storied buildings mainly including Machiya—the traditional City house—had gathered together till the latest two decades. High-rise buildings in most cases have still now replaced the sites of Machiya.

The authority of Kyoto City Municipality regarded the rapid landscape transformation of the central area as a crisis caused by depriving the central area of the historic characteristics and the remarkable going down of function for providing citizens with livable environments. The

scientific symposiums of ICOMOS have also argued the environmental deteriorations brought by arbitrary redevelopments and the countermeasures toward them in central areas of historic cities since the 12th General Assembly's Workshop held at Morelia of Mexico in 1999.

Kyoto City Municipality enforces the new landscape policies since 2007, which indicate the building height regulation levels must be reduced from the old limitation standards in almost urbanized areas. It should be remembered citizen's movements to protect townscapes and livable environments for more than at least 20 years influenced on the City Authority to adopt the new policies. Citizens now should consciously participate in a general conservation program of tangible features of the historic city and they have recognized its possibility. It is emphasized that citizens do not leave oppressive activities to deform arbitrarily their own living spaces due to feeling an incapability of controlling, but take part in the design process to protect the living environments in Kyoto.

The conservation program should be based on historic city blocks, because sets of streets and alleys formed infrastructures which have contained low-storied Machiya buildings provided side by side. The spatial structure of Machiya has completed its prototype on this historic foundation. The integration of diverse urban activities is the function peculiar to the historic city block in order to inherit its spirit of place.

An institution to promote the community participation in rearrangement of historic city blocks that this report suggests has the principal framework as follows.

- (1) The function of historic city blocks is inherited. The Machiya life is reevaluated and its social identity is confirmed.
- (2) The design zoning system is introduced in order to guide the architectural activities. The diverse applications of the zoning system are allowed due to the variety of the community's proper characteristics.
- (3) The decision for adopting the design zoning system is executed by communities.

This report presents the result of the case study on conservation model plan for a typical city block, which also includes a proposal of middle-storied apartment house as a sub-model. It is one of the focuses on the historic city block conservation program.

2. The Principle of Spatial Integration in Historic City Blocks

The historic city blocks are classified into two groups in the central area. One is square(120m×120m), the other is rectangular(120m×60m). This study selects a single city block (120m×120m) within those two groups, in which the percentage of the total area of sites occupied by wooden framed buildings exceed 50% in each city block by means of on-map measurement.

A Machiya's site, the frontage of which is shorter than the exceedingly long depth, was formed by land subdivision within a city block under the increasing land use pressure through urbanization. There was no superior layout to Machiya's, which united inside space with outside one as a whole by means of arranging a backyard and several small yards to keep comfortable environments in the old urban grid pattern in which Machiyas were closely built side by side. It is supposed that the rooms are assigned according to a placement of backyard and the other small yards. The layout remains not only the traces left by architectural styles proper to both the nobles and the samurais, but the result of pursuing the comfort of Machiya life.

The old emotion of people who valued contacts with nature has been inherited in backyard and small yards through generations. It is seen that there was a manner to make a neutral space limited by wide veranda and deep eave between inside and outside. This was also the way of realizing the contact with nature based on the Japanese sentiments of life. The layout put its foundation on both the esthetic feeling of people and the practical necessities of life (Figure 1).

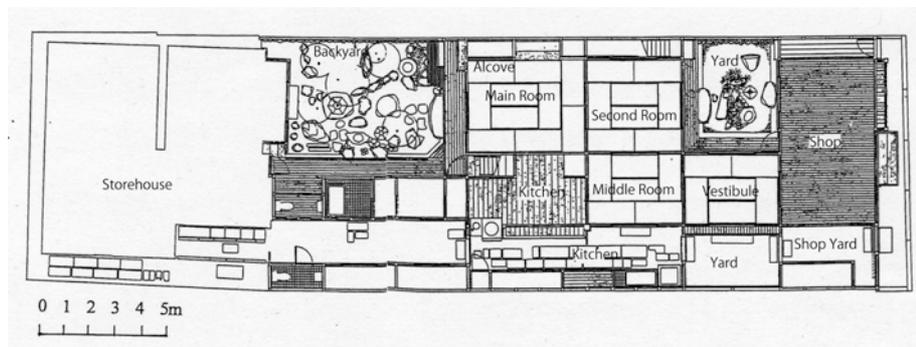


Figure 1. Typical layout of Machiya

How was the backyard taken into the private site? The common area herein the city block was gradually enclosed in the rear of each site of

building. The privatized space influenced on plans not only to make open to the sky space to meet rooms, but also to make rooms to face the natural environment from inside. It can be affirmed the backyard has its origin in this process.

The dense construction of Machiya was possible on a premise that spatial demands of both inside and outside were satisfied. The side-by-side construction depended on keeping the non-aggressive neighboring relationship to keep the privacy of backyard. If the relationship was broken, the situations of backyards had to be suddenly threatened. Namely, a principle of interdependence was necessary to protect backyards, which were indispensable to the survival of Machiya. People have recognized the traditional substance of communal agreements as cooperative void that should not be one-sidedly disturbed by private building activities.

The base of integrating a city block was the interdependent relationship between each backyard and the cooperative void, which needs to be revived and continued for communities to control the spatial transformation toward the desirable direction.

3. The Framework of Conservation and Restoration

Figure 2 appealing the present appearance of the city block shows the area where low-storied houses have been built is disclosed by the territory of high-rise buildings. This block is included in the commercial area under the official land use plan that still now allows 400% of the maximum floor area ratio. Especially, it should be noticed there is no design code that must regulate the architectural activities inside block to conserve and restore the living environments. The absence of design control has caused the serious confusion of skyline, which must impress people of the overwhelming aggression of building activities.

High-rise buildings built next to next have chopped the cooperative void, the physical significance of which disappeared at the same time. It must be emphasized that it has been removed from the consciousness of people, even when many high-rise buildings don't prevail over the city block. The dual structure formed by the backyard and the cooperative void has been broken. At the moment, the private space symbolized in backyard was left alone so that the Machiya has become isolated from others, and has confronted the difficulty to survive in the city block at the next moment.

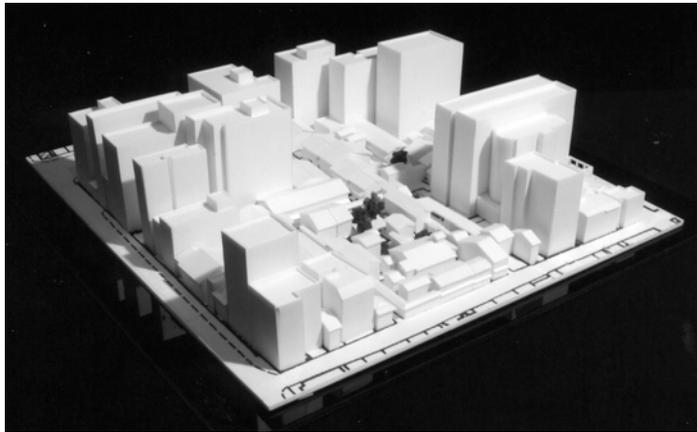


Figure 2. Present Appearance of City Block

A simulation for the near future of the city block informs that the pressure on the living environments surrounding low-storied houses will increase because of the continual constructions of tall buildings (Figure 3). The noticeable phenomenon that is seemed to occur in the near future will be a complete change of appearance now formed by wooden houses, the group of which will be subdivided into small parts by the intrusion of tall buildings. This block will face the definite level that the function for conserving the wooden housings will be disclosed perfectly. Only the cultural asset of Machiya designated by City Authority along the southern street will be barely preserved for the future.

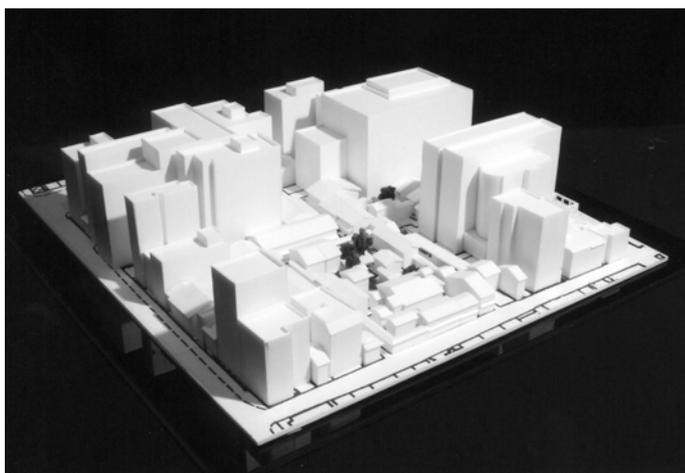


Figure 3. Simulation for the Future of City Block

Now it is evident that which direction should be selected for the future. The main subject for rearranging the historic city block is to provide the

spatial structure capable to recover the Machiya buildings from their isolations. The rearrangement program must include a new method, which does not oppress the people's cooperative consciousness. For the reason, the prevailing manner to construct tall cubic buildings fully developed in oblong sites must be stopped, on the contrary the new design control is necessary for reducing the height of buildings and making the upper space open to the sky inward the city block.

The spatial change is occurred by conflict of interests in land uses. The phases of change are not the same but indicate various features due to differences lying in the street types and environmental intolerable disturbances influences by the extreme unbalance of the height level between wooden houses and neighboring high-rise buildings.

Those variations can be classified according to the design policies commonly summarized under the each category. The system of design zoning to control the transformation dynamics of city block proposed here is composed of 6 categories as follows.

- (1) Conservation—cultural monuments and sites, e.g. cultural assets designated by City Authority and other public organizations
- (2) Sub-conservation—conservation zone aided by restoration to inherit the historic appearance, e.g. townscapes of traditional wooden houses preserving the traditional style with necessary repair for sustaining people's lives
- (3) Improvement—zone of low-storied houses which need to improve the living environments, e.g. housing areas along alleys and groups of job-life co-existence houses like retail, wholesale stores and atelier along streets
- (4) Construction of Machiya—zone for inserting backyard houses presented by the Machiya style to recover the historic features, e.g. sites provided with wooden houses possessing the general characteristics of Machiya along both street and alley in combination with each other generally
- (5) Modification for neighboring townscape—zone for contributing to recovering the harmonious features by means of reducing the height level and making the rear of sites open to the sky, e.g. reconstructions of tall hotels and other buildings for miscellaneous uses facing the main streets
- (6) Provision of new apartment house—zone for constructing the new flats in which various family types can live by keeping intimate relationships with communities, e.g. public or private middle-storied apartment houses

4. Comparing Backyard with Courtyard House and Designing Apartment Composed of Unit with Yards

It is proved that the prototype of courtyard house was originated in the ancient Sumerian houses. The comparative considerations between the Sumerian courtyard house and the Japanese Machiya are very attractive even though the spatial structure and building materials of Machiya are fundamentally different from those of the Sumerian houses under the arid region in contrast with the Japanese humid environments in the monsoon climate.

Harriet Crawford suggests the standard courtyard house plan was born through a considerable variety of ad hoc modifications of houses crammed together in blocks separated by large streets and threaded through with narrow alleys according to the obvious pressure on land. This situation is common to the Machiya's case. The backyard also functions to mitigate the environmental disadvantages in taking the sunlight and wind caused by the crammed buildings in city blocks like the Sumerian courtyard house.

On the contrary, it must be recognized that the ancient urban grid pattern historically regulated the land subdivision and the construction of Machiya, which could be different from the Sumerian cities. The backyard has been used for enjoying scenery, but in the case of the Sumerian courtyard, the practical uses such as an access to rooms around it and communications of family have had priority to other activities. How to enjoy backyards has depended on the way of life on the floor inside houses, but the Sumerian courtyard has accorded to their earth floor lives. The ontology of yard has the close connection with its usage.

The rooms of Machiya are open to the backyard, the privacy of which is protected by fences made of wood or soil built at the boundary of the neighboring backyards. In the Sumerian case, the rooms have respectively clear independence from the courtyard, with which rooms are connected through doorways.

Through the comparative considerations, it can be insisted that the Sumerian courtyard was basically the space to mitigate the influences of the severe natural environments, which made courtyards not open but remarkably close. At the same time, Faozi Ujam suggests that the courtyard was seen as positive volume, which connected the ground plane of human life with the vertical plane of the heavens. The courtyard has been the practical way to express the adaptation to the natural

environments, which has symbolized the human spirit inherited by the people through the longest history of life.

Meanwhile, there has been the Japanese gardening idea to unite human life with nature in the way of enjoying aesthetic scenery. The open to the sky backyard and the other yards symbolizing the unity between human life and nature have survived as the same positive volume for adaptation to the natural environments as the Sumerians.

The conservation program of the historic city block proposed here fundamentally insists to revitalize the layout theory of Machiya and to recover the cooperative void, because, it is emphasized here again, the backyard and other small yards are seemed as positive volume having the functional and spiritual meanings.

How to apply the design principle of positive volume and cooperative void to a plan of middle-storied apartment houses is considered in Figure 4. This suggests that the middle-storied apartment house will be allowed if it can realize those design principles. The result of physical trials is that the houses with yards attached to both sides meeting each other are laid within 4 stories in the conic shape toward the inner side of the city block. It is remarked this idea is the modernized interpretation of the traditional adaptation to the monsoon climate.

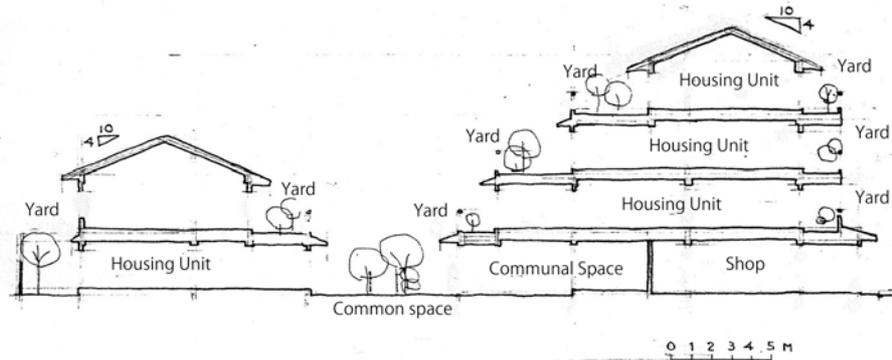


Figure 4. Proposed Section of Apartment House

The courtyard house of the ancient Mesopotamia and the Machiya of Kyoto have still now survived in each history of housing. These continuations indicate the ceaseless adaptation processes, even though there are the long interval of time and different backgrounds in both regions.

5. Methodology of Proposing the Optional Alternatives by Simulation

The main purpose of the system of design zoning is to make the comprehensive conservation program by integrating both backyard and cooperative void into the spatial interdependence. As mentioned above, Figure 3 expresses the image in the near future under the circumstances that the arbitrary developments are not regulated by the system of design zoning. On the contrary, Figure 5 suggests the image model as a result for the future simulated by adopting the system.

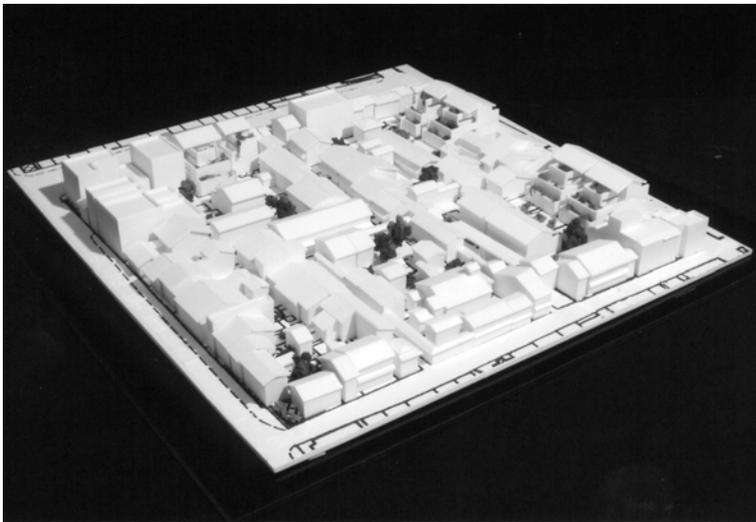


Figure 5. Proposal for City Block

The comparative simulation makes people possible to recognize how the restoration of the cooperative void shows the impressive effect. It must be understood that the building height should be limited under middle-story level in order to modify the building skyline in harmony with townscape of the existing low-storied wooden houses, even if replacements are necessary for meeting the needs of urban activities. Finally, it must be noticed the apartment houses composed of housing units with yards extremely enhance the environmental amenities in the city block.

The institution for rearrangement of historic city blocks fundamentally guarantees communities for the right of proposal. Besides, it can be supposed that there are planning phases such as cognition of present conditions, simulation for the future and determining of plan, each of which is an element of the spiral chain for cognitive developments. The

right of proposal proper to communities means that they have the responsibility to value the results of estimation on each phase and to participate in making decision of plan.

The change of actual situations subordinates to the transitions caused by the conflictions of interests in relation with the private spatial uses and land ownerships, which deepen the people's cognition of surroundings. Accordingly, the goal for controlling the spatial changes may be altered to another ones, and the allowance of its substitution is a premise for optional alternatives.

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